

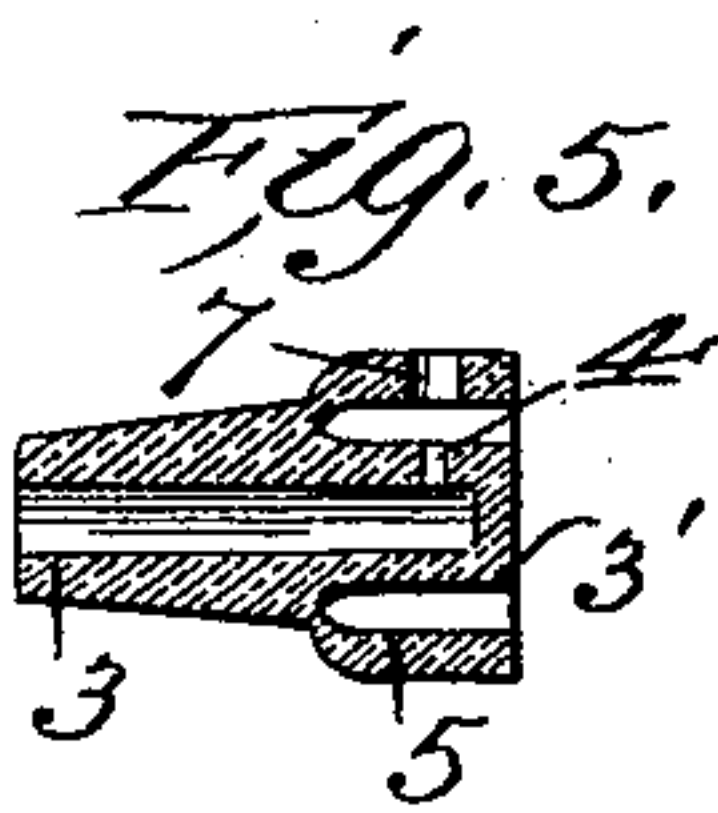
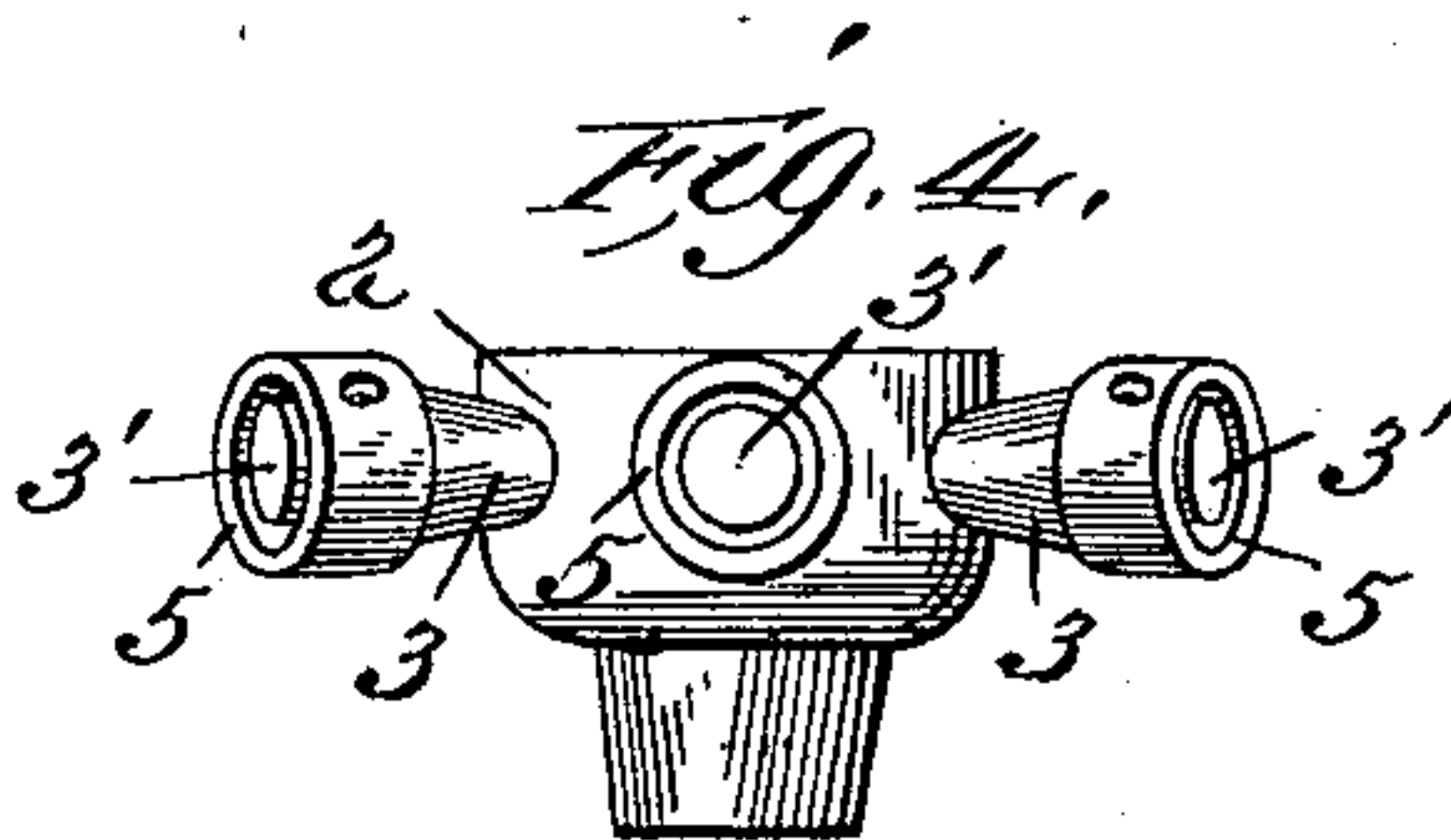
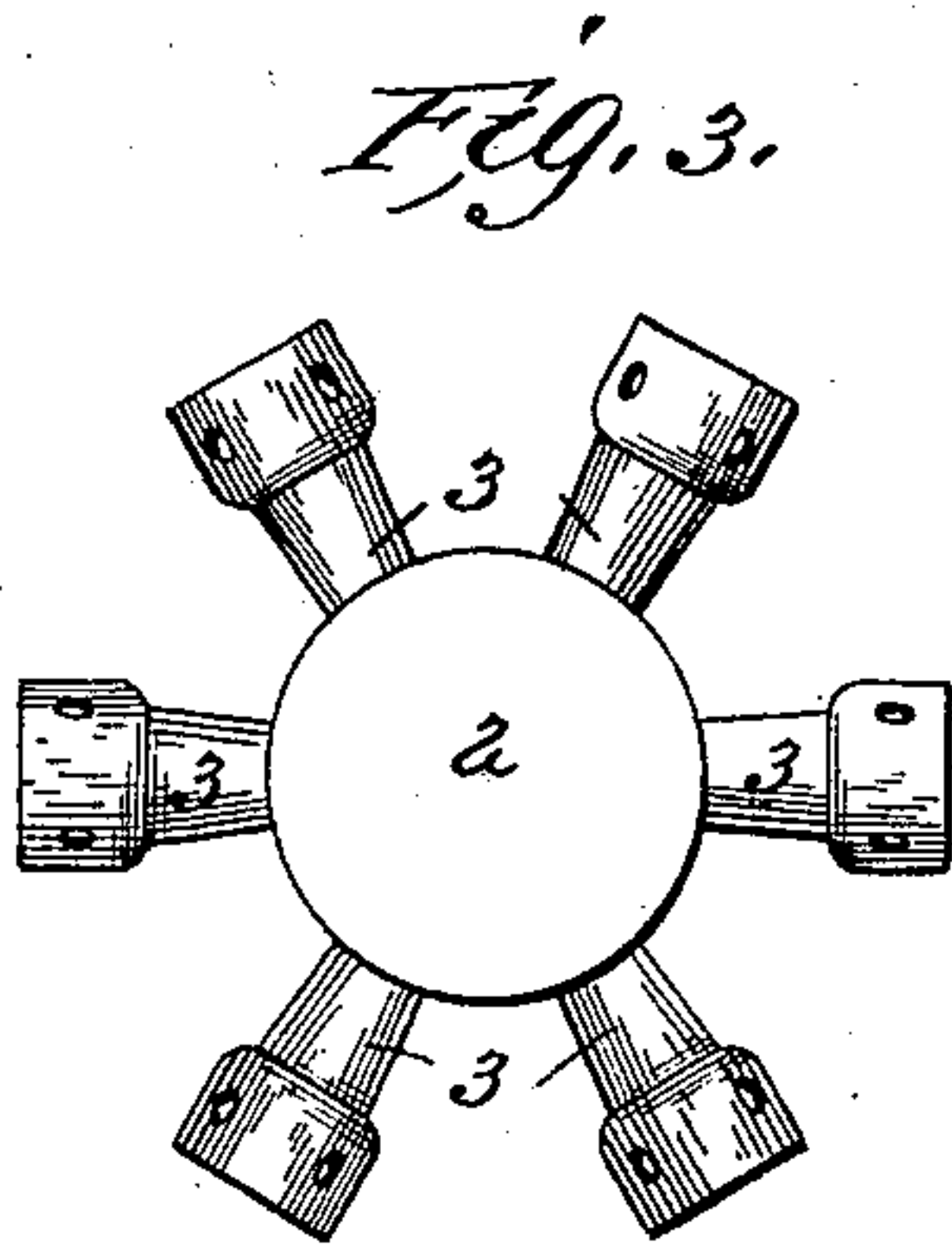
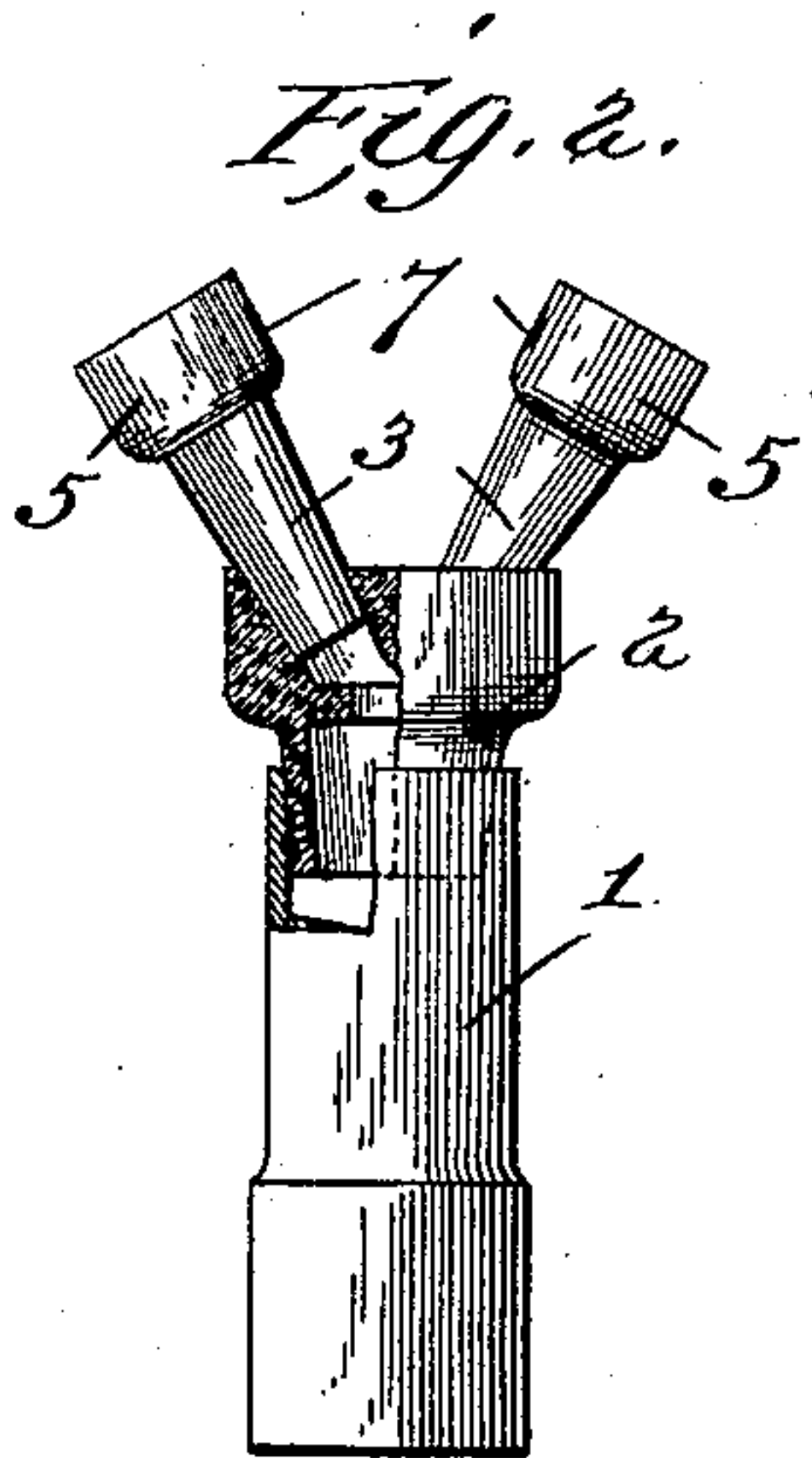
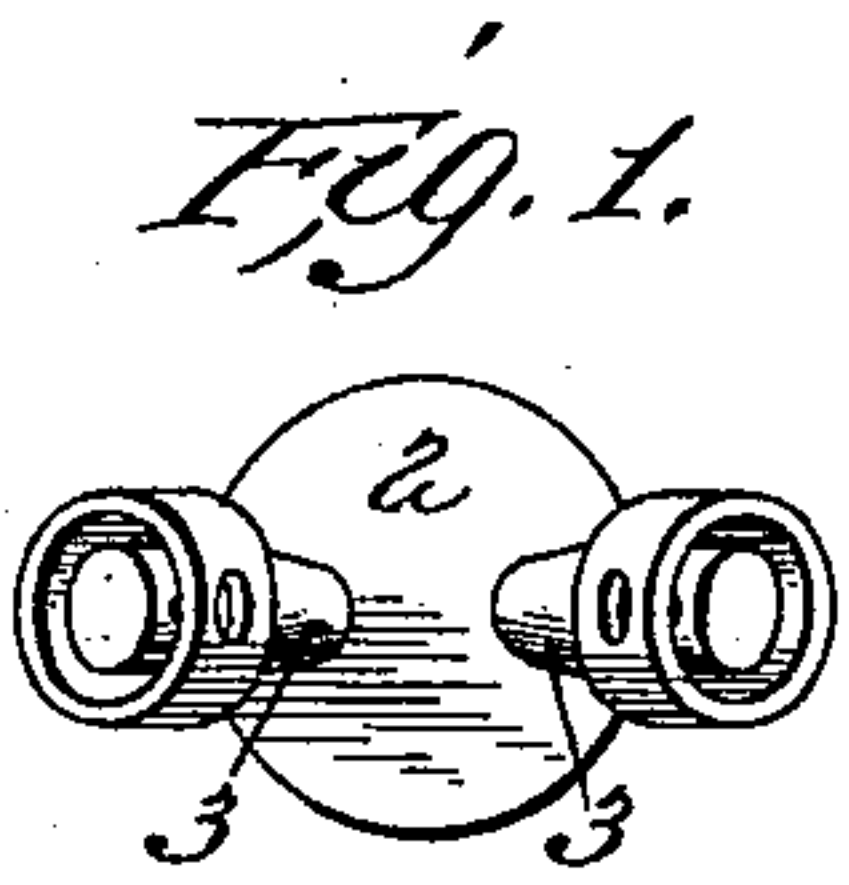
No. 629,623.

Patented July 25, 1899.

D. M. STEWARD.
ACETYLENE GAS BURNER.

(Application filed Dec. 8, 1898.)

(No Model.)



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UNITED STATES PATENT OFFICE.

DEMETRIUS M. STEWARD, OF CHATTANOOGA, TENNESSEE.

ACETYLENE-GAS BURNER.

SPECIFICATION forming part of Letters Patent No. 629,623, dated July 25, 1899.

Application filed December 8, 1898. Serial No. 698,651. (No model.)

To all whom it may concern:

Be it known that I, DEMETRIUS M. STEWARD, a citizen of the United States, residing at Chattanooga, Tennessee, have invented certain new and useful Improvements in Acetylene-Gas Burners, of which the following is a specification.

My invention relates to gas-burners particularly designed for burning acetylene gas; and the object thereof is to provide a burner of generally improved construction.

To this end the invention includes a burner having a lava head, which may be fitted to a suitable metal pillar, and a series of stems with jet-openings therein secured in the head, so that there will be no direct connection between the metal pillar and the stems.

The invention also includes the particular construction of the stems to provide for the uniform admixture of the air with the gas as it is discharged from the openings in the stems.

The invention is illustrated in the accompanying drawings, in which—

Figures 1 and 2 show one form of the burner in plan and side elevation, respectively. Figs. 3 and 4 show similar views of another form of the burner, and Fig. 5 shows in sectional view one of the stems.

The pillar 1 may be made as usual, of any desirable metal, and into the end thereof the head 2 of the burner proper is fitted, this head being made of lava or any similar substance.

In the form illustrated in Figs. 1 and 2 the two stems 3 are fitted in obliquely-running openings drilled in the head from the top of the same, which are inclined in opposite directions to each other, and the stems project obliquely above the top of the head in corresponding opposite directions. Each stem is of cylindrical form, slightly tapering, with its smaller end fitting within the openings in the head 2 and its larger end surmounted by a burner-tip formed by an annular cup-shaped flange 5 and extension 3', through which the discharge-opening 4, leading from the stem, is drilled. In the flange 5 an opening 7 is drilled opposite each opening 4 of a larger diameter than the same and in radial line therewith. This flange provides an air-space between the extension 3' and the interior of the flange, so that as the gas is discharged from the opening 4 it will suck the air into the air-space and so provide for a uniform admixture of

the air with the gas discharged through the openings 7.

In Figs. 1 and 2 the openings in the tips are located directly opposite to each other, so that the jets of gas and air mixed therewith will meet, and thus form a flat flame.

In Figs. 3 and 4, as will be seen, a plurality of radial stems are provided, which are fitted in holes drilled in the sides of the head. The tip of each stem in this form is provided with two discharge-openings, which are so located as to direct the jet toward a jet from the adjacent tip and upwardly in an oblique direction. The jets so discharged from each tip will commingle with the jets discharged from the adjacent tip on each side thereof, so as to form flat flames between each pair of stems.

As before noted, the head 2 is interposed between the pillar and the stems, and as the tip is located on the outer end of the stem the pillar is prevented from becoming heated, thus avoiding the trouble experienced in burners in which the part fitted directly in the pillars becomes heated. In this latter construction, by reason of the difference in expansion and contraction between the pillar and said part, the relative positions of the same are altered, which will deflect the jets of gas from a straight course and so distort the flame.

I claim—

1. In combination with a metal pillar a head fitted therein, burner-stems extending from said head diverging from each other and arranged in pairs and jet-openings in each stem adapted to direct the jet toward that of the adjacent stem, substantially as described.

2. In combination, the pillar, the head, the stem fitted at one end in said head and having its opposite end reduced and having a discharge-opening leading therefrom and an integral annular flange surrounding said reduced end, said flange having an opening in line with the discharge-opening whereby an enlarged cup-shaped end is provided at the outer extremity of the stem, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

DEMETRIUS M. STEWARD.

Witnesses:

C. S. MIDDLETON,
L. B. MIDDLETON.